Hall Ticket No | | | | | | | | | | | Question Paper Code: ACSB01

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Four Year B.Tech I Semester End Examinations (Supplementary) - January, 2019

Regulation: IARE – R18

PROGRAMMING FOR PROBLEM SOLVING

Time: 3 Hours **(Common to AE | ME)** **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Define algorithm and flow chart. List the properties of an algorithm. Draw a flowchart to calculate the average from 25 exam scores. **[7M]**

(b) Write a C program to read two floating point numbers using a scanf statement assign their sum to an integer variable and then output the values of all three variables. **[7M]**

2. (a) Explain the various operators used in C programming and exemplify the use of ternary operator. **[7M]**

(b) The total distance traveled by a vehicle in t seconds is given by distance = ut + $(at^2)/2$ Where u is the initial velocity, a is the acceleration.
Write a C program to calculate the total distance traveled by the vehicle. **[7M]**

UNIT – II

3. (a) Explain various types of multi-way selection statements with an example. **[7M]**

(b) Write a C program to find all roots of a quadratic equation using if.. else statement? **[7M]**

4. (a) Explain in detail the various C Language loop statements with suitable example. **[7M]**

(b) Write a program that asks the user to type two integer values at the terminal.
(i) Test these two numbers to determine if the first is evenly divisible by the second, and then display an appropriate message at the terminal.
(ii) Display the result of dividing the first integer by the second, to three-decimal-place accuracy. Remember to have the program check for division by zero. **[7M]**

UNIT – III

5. (a) Explain the following with an example: **[7M]**
(i) Character Arrays.
(ii) Multidimensional Arrays.

(b) Write a C program to find the minimum value in an array using a function. **[7M]**

6. (a) Distinguish Lvalue and Rvalue of an array element? Explain the differences with example. **[7M]**

(b) Write a C program to copy the content of a string to another string without using String handling functions. **[7M]**

UNIT – IV

7. (a) What is nested structure? Write a C Program to illustrate the concept of nested structure. **[7M]**

(b) Write a program using pointers to compute the sum of all elements stored in an array. **[7M]**

8. (a) Define a structure and state how the members of a structure are accessed with example? Write the major differences between arrays and structures. **[7M]**

(b) Write a C program to maintain a book structure containing name, author and pages as structure members. Pass the address of structure variable to a user defined function and display the contents. **[7M]**

UNIT – V

9. (a) Explain the following functions:

(i) getw() (ii) putw() (iii) getc() (iv) putc(). **[7M]**

(b) Write a c program to replace a specific line with another text in a file. Assume that the content of the file test.txt is : **[7M]**

test line 1
test line 2
test line 3
test line 4

10. (a) What is a file and file pointer? Write a program to read last 'n' characters of the file using appropriate file functions. **[7M]**

(b) Write a C Program to read list of integers and perform Insertion sort on them. **[7M]**

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